

[SHALLOW TRENCH ISOLATION AND METHOD OF FORMING THE SAME]

Abstract

A method of forming a shallow trench isolation (STI) is described. A substrate having a patterned hard mask thereon is provided. A trench is formed in the substrate by etching a portion of the substrate exposed by the hard mask layer. A first insulating layer is formed over the patterned hard mask layer and filling the trench. A liner layer is formed on the first insulating layer and on the remained hard mask layer. A second insulating layer is formed on the liner layer. A portion of the second insulating layer, a portion of the liner layer and a portion of the first insulating layer is removed until the mask layer is exposed. The patterned hard mask layer is removed. The liner layer covering the STI is thus formed.